



# DECUS

## PROGRAM LIBRARY

DECUS NO.	8-360
TITLE	ASCII TO FRIDEN (EIA)
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DATE	September 10, 1970
SOURCE LANGUAGE	PAL-D

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DATE 10/1/01 BY 1045



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## ASCII TO FRIDEN (EIA)

DECUS Program Library Write-up

DECUS NO. 8-360

### DESCRIPTION

This program converts from ASCII to Friden (EIA) using a specific restricted character list which is available in the assembly listing. Since there is a restricted character list there are provisions made for operating with or without illegal character halts. In either case conversion and output continues with illegal character ignored. Also provided is the capability of using high or low speed paper tape equipment and intermixing for input and output.

### MINIMUM EQUIPMENT

4K PDP-8 with ASR33 TTY.

### OPERATING PROCEDURES

1. Load program using Binary Loader.
2. Place  $\emptyset 2 \emptyset \emptyset$  in switch register and depress LOAD ADDRESS.
3. Set Bits  $\emptyset$ ,  $1 \emptyset$  and  $11$  of the SR for desired options as listed below.
4. Place ASCII paper tape to be converted in appropriate reader with blank leader over the reader head and turn reader on (if necessary).
5. Turn appropriate punch on.
6. Depress START.
7. Conversions will take place and when complete, computer will halt with 7777 in accumulator.
8. If another tape is to be converted, go to step 3 and depress CONTINUE in step 6 instead of START.

### OPTION BITS

- Bit  $\emptyset = \emptyset$  ; Computer will ignore all illegal ASCII characters. The computer will only halt at end of conversion.
- Bit  $\emptyset = 1$  ; Computer will halt with the illegal ASCII code in the accumulator. To go on depress the CONTINUE key. The illegal character will be ignored and conversion will proceed.



Bit 10 = 0 ; Input will be taken from low speed reader (ASR33).

Bit 10 = 1 ; Input will be taken from High Speed Photoelectric Reader.

Bit 11 = 0 ; Output will be to the low speed punch (ASR33).

Bit 11 = 1 ; Output will be to the high speed punch.

## LISTING

A listing is attached.

## MISCELLANEOUS

TAB1 is the table which contains the negative 8 bit codes for the legal ASCII characters. It is terminated with a zero word.

TAB2 is the table which contains the corresponding Friden characters.

In order to expand the amount of legal conversion characters it would be necessary to modify both TAB1 and TAB2, adding the appropriate negative ASCII code to the bottom of TAB1 and the corresponding Friden code to the bottom of TAB2 in proper order.

```

/ PROGRAM TO CONVERT ASCII TO FRIDEN EIA CODE
/ VIA HIGH OR LOW SPEED PAPER TAPE EQUIPMENT.
/ CODES TO BE CONVERTED ARE LIMITED TO THOSE
/ THAT ARE UNIQUE IN EIA.
/
/ ERROR CONDITION-          HALTS WITH ILLEGAL ASCII CODE
/          IN AC.
/          TO GO ON, DEPRESS CONTINUE KEY,
/          ILLEGAL CHAR. WILL BE IGNORED.
/
/ FOR OPERATION WITH ERROR HALTS:
/          SWITCH REGISTER BIT 0=1
/
/ FOR OPERATION WITHOUT ERROR HALTS:
/          SET SR BIT 0 = 0
/
/ FOR HIGH SPEED READER OPERATION:
/          SET SR BIT 10 = 1, OTHERWISE = 0
/
/ FOR HIGH SPEED PUNCH OPERATION:
/          SET SR BIT 11 = 1, OTHERWISE = 0
/

```

\*20

0020	0000	LDR,	0
0021	1027		TAD M30
0022	3030		DCA CNT
0023	4031		JMS TYPE
0024	2030		ISZ CNT
0025	5023		JMP -2
0026	5420		JMP I LDR
0027	7750	M30,	-30
0030	0000	CNT,	0
0031	0000	TYPE,	0
0032	6041	T1,	TSF
0033	5032		JMP -1
0034	6046	T2,	TLS
0035	7300		CLA CLL
0036	5431		JMP I TYPE
0037	0000	LISN,	0
0040	6031	K1,	KSF
0041	5050		JMP WAIT
0042	3047		DCA PTRF
0043	1056		TAD MWAIT
0044	3057		DCA PTRF1
0045	6036	K2,	KRB
0046	5437		JMP I LISN
0047	0000	PTRF,	0
0050	2047	WAIT,	ISZ PTRF
0051	5040		JMP K1
0052	2057		ISZ PTRF1
0053	5040		JMP K1
0054	5455		JMP I SUPRC1
0055	0232	SUPRC1,	SUPRC
0056	7774	MWAIT,	-4
0057	0000	PTRF1,	0
0060	0000	FILL,	0
0061	0000	ENDFLG,	0
0062	0000	TEM,	0
0063	6041	CTSF,	TSF



0064	6046	CTLS,	TLS
0065	6031	CKSF,	KSF
0066	6036	CKRB,	KRB
0067	6011	CRSF,	RSF
0070	6016	CRRB,	RRB RFC
0071	6021	CPSF,	PSF
0072	6026	CPLS,	PLS
/			
/			
*200			
0200	7300	BEGIN,	CLA CLL
0201	3061		DCA ENDFLG
0202	6046		TLS
0203	6014		RFC
0204	7200		CLA
0205	6026		PLS
0206	7604		LAS
0207	7110		CLL RAR
0210	7630		SZL CLA
0211	4315		JMS HIP
0212	4324		JMS LOP
0213	7604		LAS
0214	7112		CLL RTR
0215	7630		SZL CLA
0216	4332		JMS HIR
0217	4341		JMS LOR
0220	4020		JMS LDR
0221	4347	GETCHR,	JMS SETUP
0222	3411		DCA I 11
0223	2060		ISZ FILL
0224	5222		JMP *-2
0225	4347		JMS SETUP
0226	4037	GET,	JMS LISN
0227	3411		DCA I 11
0230	2060		ISZ FILL
0231	5226		JMP GET
0232	7040	SUPRC,	CMA
0233	4347		JMS SETUP
0234	2060	PROC,	ISZ FILL
0235	7410		SKP
0236	5221		JMP GETCHR
0237	1411		TAD I 11
0240	7450		SNA
0241	5306		JMP IGNO
0242	2061		ISZ ENDFLG
0243	7410		SKP
0244	5242		JMP *-2
0245	3062		DCA TEM
0246	1062		TAD TEM
0247	1302		TAD M212
0250	7650		SNA CLA
0251	5234		JMP PROC
0252	1304		TAD RTAB1
0253	3010		DCA 10
0254	1410	LOOK,	TAD I 10
0255	7450		SNA
0256	5272		JMP ERR
0257	1062		TAD TEM
0260	7640		SZA CLA
0261	5254		JMP LOOK

0262	1304		TAD RTAB1
0263	7041		CIA
0264	1010		TAD 10
0265	1305		TAD RTAB2
0266	3062		DCA TEM
0267	1462		TAD I TEM
0270	4031		JMS TYPE
0271	5234		JMP PROC
0272	7604	ERR,	LAS
0273	7104		RAL CLL
0274	7620		SNL CLA
0275	5234		JMP PROC
0276	1062		TAD TEM
0277	7402		HLT
0300	7300		CLA CLL
0301	5234		JMP PROC
0302	7566	M212,	-212
0303	7401	M377,	-377
0304	0777	RTAB1,	TAB1-1
0305	1051	RTAB2,	TAB2-1
0306	1061	IGNO,	TAD ENDFLG
0307	7650		SNA CLA
0310	5234		JMP PROC
0311	4020		JMS LDR
0312	7040		CMA
0313	7402		HLT
0314	5200		JMP BEGIN
0315	0000	HIP,	0
0316	2315		ISZ HIP
0317	1071		TAD CPSF
0320	3032		DCA T1
0321	1072		TAD CPLS
0322	3034		DCA T2
0323	5715		JMP I HIP
0324	0000	LOP,	0
0325	1063		TAD CTSF
0326	3032		DCA T1
0327	1064		TAD CTLS
0330	3034		DCA T2
0331	5724		JMP I LOP
0332	0000	HIR,	0
0333	2332		ISZ HIR
0334	1067		TAD CRSF
0335	3040		DCA K1
0336	1070		TAD CRRB
0337	3045		DCA K2
0340	5732		JMP I HIR
0341	0000	LOR,	0
0342	1065		TAD CKSF
0343	3040		DCA K1
0344	1066		TAD CKRB
0345	3045		DCA K2
0346	5741		JMP I LOR
0347	0000	SETUP,	0
0350	1303		TAD M377
0351	3060		DCA FILL
0352	1377		TAD (1777
0353	3011		DCA 11
0354	5747		JMP I SETUP



0377	1777	
		*1000
1000	7563	TAB1, -215
1001	7477	-301
1002	7476	-302
1003	7475	-303
1004	7474	-304
1005	7473	-305
1006	7472	-306
1007	7471	-307
1010	7470	-310
1011	7467	-311
1012	7466	-312
1013	7465	-313
1014	7464	-314
1015	7463	-315
1016	7462	-316
1017	7461	-317
1020	7460	-320
1021	7457	-321
1022	7456	-322
1023	7455	-323
1024	7454	-324
1025	7453	-325
1026	7452	-326
1027	7451	-327
1030	7450	-330
1031	7447	-331
1032	7446	-332
1033	7540	-240
1034	7520	-260
1035	7517	-261
1036	7516	-262
1037	7515	-263
1040	7514	-264
1041	7513	-265
1042	7512	-266
1043	7511	-267
1044	7510	-270
1045	7507	-271
1046	7522	-256
1047	7521	-257
1050	7523	-255
1051	0000	0
1052	0200	TAB2, 200
1053	0141	141
1054	0142	142
1055	0163	163
1056	0144	144
1057	0165	165
1060	0166	166
1061	0147	147
1062	0150	150
1063	0171	171
1064	0121	121
1065	0122	122
1066	0103	103
1067	0124	124
1070	0105	105



1071	0106	106
1072	0127	127
1073	0130	130
1074	0111	111
1075	0062	62
1076	0043	43
1077	0064	64
1100	0045	45
1101	0046	46
1102	0067	67
1103	0070	70
1104	0051	51
1105	0020	20
1106	0040	40
1107	0001	1
1110	0002	2
1111	0023	23
1112	0004	4
1113	0025	24
1114	0026	26
1115	0007	7
1116	0010	10
1117	0031	31
1120	0153	153
1121	0061	61
1122	0100	100

BEGIN	0200
CKRB	0066
CKSF	0065
QNT	0030
CPLS	0072
CPSF	0071
CRRB	0070
CRSF	0067
CTLS	0064
CTSF	0063
ENDFLG	0061
ERR	0272
FILL	0060
GET	0226
GETCHR	0221
HIP	0315
HIR	0332
IGNO	0306
K1	0040
K2	0045
LDR	0020
LISN	0037
LOOK	0254
LOP	0324
LOR	0341
MWAIT	0056
M212	0302
M30	0027
M377	0303
PROC	0234
PTRF	0047
PTRF1	0057
RTAB1	0304

RTAB2	0305
SETUP	0347
SUPRC	0232
SUPRC1	0055
TAB1	1000
TAB2	1052
TEM	0062
TYPE	0031
T1	0032
T2	0034
WAIT	0050